

INtime® 6 Software Development Kit

Comprehensive development environment for INtime® Software



INtime Software Development Kit (SDK)

The INtime SDK is a software development toolkit for the complete development cycle, from code entry to debugging, optimization, and runtime analysis of an INtime Software solution, whether for INtime for Windows or INtime Distributed RTOS or both. The INtime SDK runs on any Windows* PC platform to debug applications on target systems, either on the same host for INtime for Windows or on a remote host, via LAN, for INtime Distributed RTOS.

The INtime SDK provides everything needed to monitor and analyze the application. INtime RTOS Family applications are portable across all deployment models with binary compatibility so applications can be distributed to any number of nodes. Build, analyze, and deploy scalable software solutions to meet demanding, hard real-time application requirements.

SDK Highlights

- Single development environment for both INtime® for Windows* and INtime® Distributed RTOS
- Integrated within Microsoft* Visual Studio*
- Quick start code wizards and sample projects
- IntelliSense context aware documentation within Microsoft Visual Studio
- C or C++ with Standard Template Library
- Compatible with Boost library
- SIMD support for Intel* IPP and Intel*
 MKL libraries
- INtime Explorer dynamic object browser
- INscope system timing analyzer
- Spider multi-thread debugger
- System Debug Monitor low level debugger
- Fault analyzer

Efficient solution development using the world class Microsoft Visual Studio

INtime SDK installs as an integral part of the Microsoft Visual Studio integrated development environment (IDE), providing a very familiar development platform, while eliminating the need to purchase additional tools or learn another environment. Microsoft Visual Studio is the core resource utility for writing and debugging INtime Software applications.

INtime SDK wizards in Microsoft Visual Studio and sample applications accelerate development from application creation to debugging and optimization, so focus is on the solution instead of learning new tools. Extensive product documentation is integrated into Microsoft Visual Studio, making technical reference information easily available.

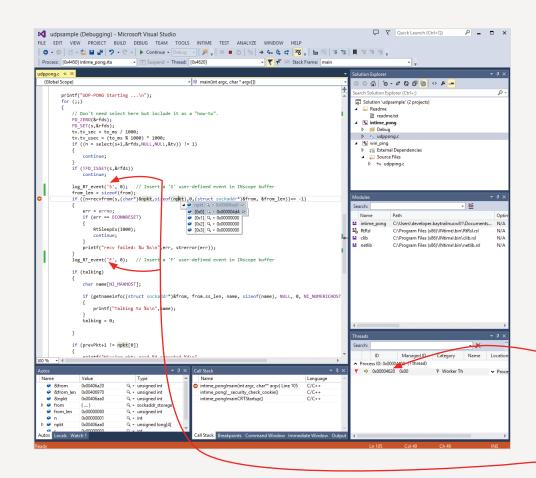
Comprehensive analysis of system state and performance characteristics are directly linked, providing precise operational details. INtime SDK tool portability and remote operation across the LAN allow developers maximum versatility without imposing undesired burdens on target system resources. The INtime SDK tools easily attach to a running system, making tough problems easy to isolate for debugging.

INtime built-in developer tools

Integrated INtime Software debugger for Microsoft Visual Studio

The INtime SDK includes an integrated source-level debugger for Microsoft Visual Studio providing real-time process and variable monitoring, and debugging, with access to the tool's most powerful features, including conditional breakpoints, variable and register inspection, source-level stepping, and watch variables.

Real-time faults automatically trigger a choice of debug tools to debug divide-by-zero errors, bad pointer accesses, page faults, stack faults, and other CPU exceptions.



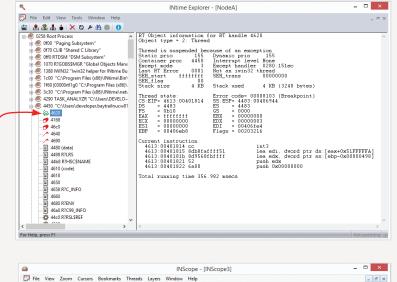
Spider Debugger – Multi-thread debugger

Spider is a secondary debugging resource for source-level and symbolic debugging of RT applications that permits control of a thread without affecting the execution of other threads.

System Debug Monitor (SDM) – Serial console-based low-level hardware debug monitor

SDM is a hardware debug monitor to disassemble code, set and execute breakpoints, display or change microprocessor registers, and display or change the contents of memory. SDM displays information about INtime kernel objects such as processes, threads, and mailboxes. Use SDM to interpret data structures maintained by the INtime kernel; for example, INtime software system calls, stacks, and the GDT.



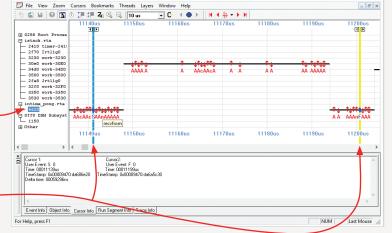


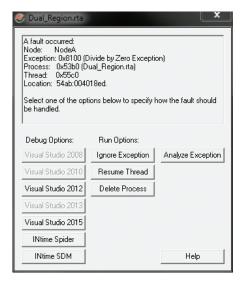
INtime Explorer – Dynamic object browser

INtime Explorer provides a convenient way to view and interact with the state of processes, threads, and objects at runtime. Browse objects, inspect details, and interact using a friendly GUI. Control of objects, such as deleting, signaling, and suspending or resuming threads, are done interactively to assist in system debugging. Unhandled exceptions are analyzed with the monitoring and reporting function, generating a post-crash analysis report. A system statistics monitoring function displays per-thread and per-process CPU usage.

INscope – **Real-time** system analysis

INscope is used to verify operation of time-critical code as well as proper sequencing of real-time events. Output is displayed as a familiar logic-analyzer-type graphical trace. An API is included that allows the addition of user-defined events to the trace log to precisely control trigger points, such as starting and stopping the trace. Details include information about the execution of real-time applications, including precise timing, thread switches, system library calls, and interrupts.





Fault Manager

The Fault Manager provides a choice of actions to use after a fault including debug tools.

The Fault Manager can be used on remote nodes as well as on local nodes.

System requirements

Minimum requirements for a Windows PC-compatible host to run INtime SDK include:

- Any 32- or 64-bit versions of:
 - Windows 10
 - Windows 8.1
 - Windows 8
 - Windows 7
 - Windows Server versions: 2019, 2016, 2012 R2, 2012, 2008 R2
- Microsoft Visual Studio 2019, 2017, 2015, 2013, 2012, 2010, or 2008 (Community versions included)
- Any Intel or PC-compatible platform that runs Windows—including single-core, multi-core, and hyper-threaded cores (Windows 8 and later as well as all 64-bit editions of Windows require two logical processors or hardware threads)

Ordering information

INTIME6-DK-HWKEY (INtime Development Kit)	The INtime SDK (Software Development Kit) includes sample projects, C/C++ libraries and header files, TCP/IP and USB stacks, selected device drivers, INtime Explorer, INscope, the Spider Debugger utilities, one each INTIME-MCRT and RTOS-MCRT run-time license, and one year of technical support with updates and upgrades.
INTIME6-DK-NETSRV (INtime Network Development Kit)	Network starter package of six (6) INtime SDK seats. Includes network license server software.
INTIME6-DK-ADDNET (Network Licenses Increment)	Incremental addition of a single INtime SDK seat for an existing INTIME6-DK-NETSRV installation.
INTIME-DK-MAINT	Extension of maintenance and support for existing INtime SDK for one (1) additional year. Requires one maintenance extension per INtime SDK license. Includes all updates and upgrades issued during the covered period.



For more information visit www.tenasys.com or contact one of our world wide offices





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产品及方案:

▶ 工控机(涵盖多种性能、尺寸和安装方式选择)

- ▶ PLC 开发解决方案(灵活直观的 IEC61131-3 自动化平台,提供 runtime 源码和编程环境)
- ▶ Windows 实时操作系统(专为基于 PC 的嵌入式解决方案而设计的可扩展 RTOS)
- ▶ 现场总线与工业实时以太网开发方案(CANopen, IO-Link, EtherCAT, PROFINET, EtherNET/IP等多种协议)
- ▶ "新"以太网开发方案(TSN IPcore, HSR/PRP IPcore, 网管/非网管以太网 IPcore、同步 IPcore 等)
- ▶ "新"以太网硬件解决方案 (TSN 板卡, TSN 交换机, TSN 评估套件, HSR/PRP 板卡, HSR/PRP 交换机)



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